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## The Polyporaceae of North America. II. The Genus *Pyropolyporus*\*

BY WILLIAM ALPHONSO MURRILL

The European species of this genus were first separated into a distinct generic group by Quélet in his "Enchiridion Fungorum" published in 1886. His genus *Phellinus* established at that time contained four species, *P. igniarius* (L.), *P. fulvus* (Scop.), *P. conchatus* (Pers.) and *P. salicinus* (Pers.), and was characterized as follows: "Pileus velvety, persisting; context corky; pores small, fulvous brown; spores ovoid, fulvous. Plants lignatile." The name *Phellinus*, however, is preoccupied by *Phelline* assigned in 1826 to a genus of the Ebenaceae. The new name *Pyropolyporus* here proposed refers to the use of some species of this group in ancient times for the purpose of keeping fire.

### Synopsis of the North American Species

- |   |                           |
|---|---------------------------|
| 1. Pileus thick, ungulate, woody, margin obtuse, tubes several times stratified, the upper layers not dying before the lower.                           | 2.                        |
| Not as above.   | 11.                       |
| 2. Context yellowish brown.   | 3.                        |
| Context reddish orange; plants growing on trunks of <i>Juniperus</i> .  | 10.                       |
| 3. Spores hyaline.  | 4.                        |
| Spores yellowish brown.   | 7.                        |
| 4. Pileus becoming more or less rimose with age.  | 5.                        |
| Pileus covered even in age with a smooth horny crust.   | 6.                        |
| 5. Pileus simple, sulcate, sometimes polished, margin usually narrow and rounded; not found on species of <i>Prunus</i> .                               | 1. <i>P. igniarius</i> .  |
| Pileus terraced, imbricate or semiresupinate, rarely sulcate, never polished, margin broad, making an obtuse angle; found on species of <i>Prunus</i> . | 2. <i>P. fulvus</i> .     |
| 6. Context ferruginous, surface dark brown marked with narrow black concentric lines, tubes thin-walled, 5 to a mm.                                     | 3. <i>P. crustosus</i> .  |
| Context tawny, surface black without lines and more sulcate, tubes smaller, thick-walled, 7 to a mm.  | 4. <i>P. Calkinsii</i> .  |
| 7. Pileus soon becoming rimose.   | 8.                        |
| Pileus not rimose, broadly sulcate, zonate, tubes thin-walled, spores $3\mu$ in diameter, spines large and abundant; growing on <i>Quercus</i> .        | 5. <i>P. Everhartii</i> . |

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8. Tubes long, over 0.5 cm. each season, walls thin, pores large, 3 to a mm. 9.  
Tubes very short, 0.1-0.5 cm. long each season, walls equalling tubes in thick-  
ness, pores small, 5 to a mm., spores globose, 4-5  $\mu$ , cystidia none; growing  
abundantly on *Robinia*. 6. *P. Robiniae*.
9. Spores globose, 3-4  $\mu$  in diameter, cystidia present; pileus blackish, very rimose,  
hymenium convex, margin truncate, at length hoary. 7. *P. praerimosus*.  
Spores ellipsoidal, 7  $\times$  9  $\mu$ , cystidia none; pileus dark brown, hymenium concave,  
margin not hoary. 8. *P. Underwoodii*.
10. Older pores visible in projecting annual layers, tubes 3-4 to a mm., thin-walled;  
pileus deeply furrowed, not rimose. 9. *P. juniperinus*.  
Older pores not externally visible, tubes 1-2 to a mm., thicker walled; surface  
very rimose. 10. *P. Earlei*.
11. Spores hyaline. 12.  
Spores yellowish brown. 15.
12. Cystidia abundant, pointed, dark brown; pileus thin, woody, rigid, tubes short,  
5 to a mm. 11. *P. conchatus*.  
Cystidia none. 13.
13. Context thick, woody, honey-yellow, surface encrusted, margin blunt. 12. *P. Haematoxyli*.  
Context thin, punky, darker brown, surface without a crust, margin sharp. 14.
14. Pileus 10-25 cm. broad, covered with narrow shallow furrows, margin undulate  
or lobed, pores minute, 8-9 to a mm. 13. *P. Langloisii*.  
Pileus smaller, deeply sulcate, pores larger, 6 to a mm.; growing on species of  
*Ribes*, very rarely on other shrubs. 14. *P. Ribis*.
15. Dissepiments thick, hymenium concolorous with context. 16.  
Dissepiments thin, hymenium darker than context. 17.
16. Pileus very rimose, cystidia present; tubes fulvous, 7 to a mm., spores globose,  
3.5-5  $\mu$ , cystidia 17-35  $\mu$ . 15. *P. Yucatanensis*.  
Pileus scarcely rimose, encrusted, becoming smooth, cystidia absent; margin  
undulate, tubes 8 to a mm., spores globose. 16. *P. senex*.
17. Pileus hard and heavy, surface sulcate, brown, clothed with lime-white hair,  
spores 3.5  $\mu$ , spines 40-60  $\mu$ . 17. *P. linteus*.  
Upper layers of pileus dead, projecting 1-2 cm. beyond the lower, tube strata  
separated by thin layers of context, tubes 7 to a mm., spores 5-7  $\mu$ , cystidia  
absent. 18. *P. Jamaicensis*.

### 1. *Pyropolyporus igniarius* (L.)

- Boletus igniarius* L. Sp. Pl. 1176. 1753; Tourn. Inst. 1: 562. pl. 330. f. A. 1719.  
*Polyporus igniarius* Fries, Syst. 1: 375. 1821.  
*Fomes igniarius* Gill. Champ. Fr. 1: 687. 1878; pl. 156.  
*Phellinus igniarius* Quél. Ench. 172. 1886.

This plant is one of the oldest fungi known, having been used from very early times for keeping fire, whence the name. It is also abundant and widely distributed, occurring on birch, willow, beech, maple, oak, poplar, apple and many other deciduous trees in various parts of the world. Fruit-bodies observed on apple, willow, aspen, birch, etc., in Sweden, agree perfectly with those growing in the New York forests; while the variations found in Europe are duplicated here, even to the abundance or scarcity of spines in the hymenium.

Specimens are to be found in all published exsiccati bearing upon this group. Among the large number of collections examined, the following may be mentioned: New York (Underwood), New Hampshire (Miss Minns), Ottawa, Canada (Macoun), New Jersey (Ellis), Virginia (Murrill), Kansas (Bartholomew), Indiana (Underwood), Colorado (Earle), Labrador (Waghorne), Maine (Ricker), New Mexico (Earle), Finland (Karsten), Sweden (Murrill), Thüringen (Underwood).

Two forms of *P. igniarius* are listed as distinct species in Saccardo's Sylloge, *i. e.*, *Fomes badius* Berk. and *Fomes nigricans* Fries. The former was collected in Arctic North America by Dr. Richardson and the type is at Kew. The specimen is  $5 \times 6 \times 2.5$  cm. and has three layers of tubes which, in the brief northern season, were forced to develop quickly and are therefore thinner-walled than in our forms. Berkeley himself doubted if the plants were sufficiently distinct from *P. igniarius*.

*Fomes nigricans* Fries, on the other hand, is decidedly different from typical *P. igniarius*, being neat and smooth and shining black, and rimose in two directions when old. Fries observed it on birch only. Persoon noticed it also frequently on old willows, and Underwood has collected fine specimens of the same form on beech in the New York mountains. While studying living plants on willow trees in Sweden, I found stages on the same tree connecting this variety with the typical form and am convinced that we are not here dealing with two distinct plants but with variations due to season, food supply, rapidity of growth, or some other physiological cause yet to be determined. Specimens have been examined from Finland (Karsten, Starbäck), Sweden (Romell, Murrill), Newfoundland (Waghorne), Greenland (Rostrup), New

Hampshire (Miss Minns) and New York (Underwood). Klotsch's collections from Scotland are *Polyporus fomentarius* L. of advanced age and indurated. This is the conception of *F. nigricans* at Berlin (see Sydow, Myc. Mar. No. 2604). At Kew, *F. nigricans* has been considered "rare the world over." A tiny specimen  $2 \times 3 \times 2$  cm. in the herbarium of Berkeley sent from Upsala presumably by Fries himself has the external appearance of *F. nigricans* (see Fries, Icon. pl. 184), but its size would indicate that it is *Poria levigata* Fries, in its pileate form, a state of this fungus not known to Fries and easily confused with depauperate forms of *F. nigricans*. The other specimens at Kew are all old hardened forms of *P. fomentarius* L.

## 2. *Pyropolyporus fulvus* (Scop.)

*Boletus fulvus* Scop. Fl. Carn. Ed. 2. 2: 469. 1772.

*Polyporus igniarius* b. *minor*, *subperpendicularis* Fries, Syst. 1: 375. 1821.

*Polyporus fulvus* Fries, Hym. Eur. 559; Icon. pl. 184, f. 3.

*Fomes fulvus* Gill. Champ. Fr. 1: 687. 1878.

*Phellinus fulvus* Quél. Ench. Fung. 172. 1886.

Fries at first considered *Boletus pomaceus* Pers. synonymous with *B. fulvus* Scop., but later decided, and correctly so, that it is only a form of *P. igniarius* L. In Micheli's no. 9, p. 119, of his genus *Agaricum*, the two forms are confused, though his figure, pl. 61, ordo II, doubtless represents *P. fulvus* growing on *Prunus* and not *P. igniarius* growing on *Malus*. This confusion still exists in European herbaria and it is impossible to determine in them what is meant by *Polyporus fulvus* Fries. In the following description Scopoli very plainly characterizes the plant under discussion: "Totus fulvus; poris difformibus, non adeo profundis. Habitat in cerasis recens detruncatis. Junior integerrimus, adultus vero margine sinuatus. Fulvus color in margine et subtus evidentior. Poruli obsoleti, totum fungum subtus non semper occupant."

Pl. Crypt. France par Desmazières no. 5157. "Sur les pruniers et les cerisiers." Fung. Selec. Exsic. par Roumeguère No. 6963. "Forma *Cerasi*, sur un vieux cerisier." Trienti (Bresadola) on *Persica*, Eisenach and Thuringen (Underwood) on *Prunus*, Sweden (Murrill) on *Prunus*, and on *Prunus* both wild and

cultivated, in America in Alabama (Underwood), Colorado (Bethel, Cameron, Crandall), Kansas (Bartholomew, Cragin), Missouri (?), Nebraska (Webber), Ohio (Lloyd), Tennessee (Schrenk).

This fungus is very uniform in habit and appearance both in Europe and America, where it occurs on various species of *Prunus* and its near allies. Although confused in literature with *Polyporus igniarius* L., it is very distinct and always easily recognized. In an orchard near Mauritzberg, Sweden, where *P. igniarius* was abundant on apple trees, *P. fulvus* was confined to the stumps and dead or dying trunks and branches of plum trees.

### 3. *Pyropolyporus crustosus* sp. nov.

An ungulate plant of medium size with brown tubes, ferruginous substance and smooth encrusted dark brown surface. Pileus woody, convex above, plane below, somewhat compressed ungulate,  $7 \times 12 \times 5$  cm.; surface glabrous, horny encrusted, dark brown, concentrically sulcate, marked with narrow black concentric lines; margin rounded, yellowish brown, sterile: context hard, concentrically banded, ferruginous, 2 cm. thick behind; tubes indistinctly stratified, 0.5–1 cm. long each season, 5–6 to a mm., drab-colored within, mouths polygonal, concolorous, edges thin, acute, entire: spores globose to ovoid, smooth, thin-walled, hyaline,  $3.5\text{--}4 \times 4 \mu$ , hyphae darker, cystidia none.

Collected by Earle on a standing tree trunk at an altitude of 4,000 feet on Rose Hill, Jamaica, October, 1902.

### 4. *Pyropolyporus Calkinsii* sp. nov.

A large ungulate fungus glabrous and furrowed above and uniformly hard and fulvous within. Pileus very hard woody throughout, ungulate,  $10 \times 10 \times 10$  cm.; surface glabrous, dark brown to black, marked with rather shallow concentric furrows, crust thin, horny, never rimose; margin rounded, concolorous with the hymenium: context very hard woody, fulvous, 1 cm. thick; tubes in many indistinct layers, slender, minute, 7 to a mm., fulvous, mouths nearly circular, obtuse, entire: spores ovoid, hyaline, with thick, smooth, pale ferruginous wall,  $3\text{--}5 \times 5\text{--}7 \mu$ , hyphae ferruginous, cystidia none.

This species occurs on living trees of live-oak in Florida, where it was collected in considerable quantity by Major W. W. Calkins during the winters of 1886 and 1887. Several specimens are in the herbarium of the New York Botanical Garden and a single

specimen in the herbarium of the Division of Vegetable Pathology and Physiology of the U. S. Department of Agriculture.

5. **Pyropolyporus Everhartii** (Ell. & Gall.)

*Mucronoporus Everhartii* Ell. & Gall. Journ. Myc. 5: 141-142. pl. 12. 1889.

*Xanthochrous Everhartii* Pat. Cat. Tun. 51. 1897.

The type of this fungus is in the herbarium of the New York Botanical Garden. Since its discovery on the living trunk of a scarlet oak in New Jersey, it has been collected in several localities on various species of oak and occasionally on beech. Before its separation as a distinct species it had been confused with *P. igniarius*, which it outwardly resembles in some particulars.

Collections: New York (Ellis, Mrs. Ellis, Murrill), New Jersey (Ellis, Ely), Canada (Dearness), Indiana (Gentry), Pennsylvania (Herbst) and Delaware (Commons, Ellis N. A. Fungi no. 3303).

6. **Pyropolyporus Robiniae** sp. nov.

A large fungus with dark rimose surface and tawny hymenium very common on *Robinia pseudacacia*. Pileus hard woody, dimidiate, ungulate to applanate, 5-25 × 5-50 × 2-12 cm.; surface velvety, smooth, soon becoming very rimose and roughened, fulvous to purplish-black, at length dull black, deeply and broadly concentrically sulcate; margin rounded, velvety, fulvous: context hard woody, concentrically banded, 1-3 cm. thick, fulvous; tubes stratosed, 0.15-0.5 cm. long, 5 to a mm., fulvous, mouths subcircular, dissepiments entire, equalling tubes in thickness: spores subglobose, smooth, thin-walled, ferruginous, copious, 4-5  $\mu$ , cystidia none.

This fungus was one of the first to be noticed by collectors in this country, but has been unnamed until the present time. Schweinitz called it *Polyporus igniarius* and remarked that it was "frequent especially on *Robinia*"; Berkeley confused it with his *P. rimosus* described from Demerara and the Cape of Good Hope, and Cooke allayed Morgan's anxiety by assigning it most positively to the same category. To be sure, it resembles *P. rimosus* Berk. from Demerara, but the two plants are entirely distinct in appearance and shape and *P. rimosus* lacks the decided imbricated-rimose effect so characteristic of our plant. It was from the African plant, a different thing from *P. rimosus*, that the name *rimosus* must

have been obtained. It is truly rimose like *R. Robiniae*, but differs decidedly from the latter in pore-structure and context, while the spores are larger and less globose. It would be quite remarkable if a group of plants from such widely separated localities did not show specific differences.

*P. Robiniae* is abundant in the southern United States on *Robinia* and extends with it as far north as Connecticut and west to Missouri and Texas. I have not as yet seen it upon any other host, but a plant recently collected by Earle in Jamaica on *Acacia emarginata*, nearly related to *Robinia*, seems not specifically distinct from it. When *Robinia* was introduced into France several centuries ago from Virginia this fungus must have been introduced with it, since it was collected there by F. Fautrey in November, 1891, growing on *Robinia*. The specimen is at Upsala and is labelled *P. igniarius*. Among the many collections examined from America, the following may be mentioned: Massachusetts (Underwood); New York (Underwood, Earle, Murrill); New Jersey (Ellis); Ohio (James, Morgan, Lloyd); West Virginia (Nuttall); Virginia (Miss V. W. Murrill); Alabama (Underwood, Atkinson, Earle).

A good account of the destructive effects of this plant is given by H. von Schrenk in Ann. Rep. Mo. Bot. Gard. 12: 21-31. *pl.* 1-3. 1901.

#### 7. *Pyropolyporus praerimosus* sp. nov.

A large ungulate plant with plane brown hymenium and a very rimose blackish surface. Pileus woody, rounded ungulate, 8-12 × 7-10 × 8-11 cm.; surface exceedingly rimose after the first year, broadly furrowed, the projecting ridges splitting away in age, very dark brown to black; margin obtuse, velvety, rusty to hoary; context corky to woody, concentrically banded, fulvous, 0.5 cm. or less thick; tubes indistinctly stratified, 1-2 cm. long each season, 3 to a mm., concolorous within and without with the context, mouths rounded to polygonal, ochraceous at first, edges rather thick, obtuse, becoming thin and often splitting in age; spores globose, smooth, deep ferruginous, 3-4  $\mu$ ; spines ferruginous, 10-17 × 5-10  $\mu$ , largest at the base.

Collected by Earle, July, 1900, on *Quercus undulata* in the El Capitan Mountains, New Mexico, at an altitude of 7,000 feet. Related to *P. Everhartii* (Ell. & Gall.).



8. *Pyropolyporus Underwoodii* sp. nov.

A blackish ungulate plant of large size with furrowed rimose surface and long brown tubes. Pileus woody, broadly ungulate, attached by a narrow base, concave below,  $7 \times 14 \times 11$  cm.; surface many times concentrically furrowed, rimose, uniformly dark-brown to black; margin fulvous, acute or somewhat obtuse, velvety, undulate, marked with narrow zones: context hard, fulvous to dark brown, very thin, less than 0.5 cm.; tubes distinctly stratified, 0.5–1.5 cm. long each season, 3 to a mm., brown within, mouths darker, circular or polygonal, edges acute, entire: spores ellipsoidal, smooth, thin-walled, light yellowish-brown,  $7 \times 9 \mu$ , cystidia none.

Collected by Underwood and Griggs during the summer of 1901 near Coamo Springs, Porto Rico. The plant reminds one of *P. Robiniae*, but differs very widely in tube-structure, as well as in color, density and spore characters.

9. *Pyropolyporus juniperinus* (Schrenk)

*Polyporus juniperinus* Schrenk, U. S. Dept. Agr. Veg. Physiol. Bull. 21: 9–16. *pl.* 1–4. 1900.

So far as I know, there are only two specimens of the fruiting stage of this plant in existence, one collected by Schrenk in Tennessee and the other by Miss Sadie F. Price in Kentucky. The latter specimen, the better developed of the two, was sent to the Underwood herbarium in 1895.

Both specimens were found upon *Juniperus Virginiana*, the wood of which is badly affected by its mycelium. The statement made by the author that the discovery of other specimens might prove this species to be only a form of *P. fomentarius* is entirely unnecessary, since such connection between two plants so distinct is beyond the range of possibility.

10. *Pyropolyporus Earlei* sp. nov.

A broadly ungulate plant with yellow pores, red context and a dark very rimose surface. Pileus woody, attached by a broad base, plane below,  $6 \times 13 \times 17$  cm.; surface concentrically sulcate, very rimose in older parts, fulvous to brownish-black, at length grayish-black from weathering; margin broad, obtuse, dark yellowish-orange, clothed with short dense tomentum of the same color: context woody, dark reddish-orange, concentrically banded with darker lines, very thin, 0.5 cm., rimose down to the

tubes; tubes unevenly stratified, 0.5–0.75 cm. long each season, 1–2 to a mm., ochraceous within during the first season, afterwards latericeous, mouths circular, ochraceous, edges obtuse, rather thin: spores ellipsoidal, smooth, thick-walled, ferruginous,  $7-8 \times 9 \mu$ .

Collected by Earle in August, 1900, on a standing trunk of *Juniperus* in the El Capitan Mountains, New Mexico, at an attitude of 7,000 ft. It is closely related to *P. juniperinus* (Schrenk), but it is much more rimose, has larger pores and lacks the annual projecting margins of the older tube-layers so characteristic of that species.

#### 11. *Pyropolyporus conchatus* (Pers.)

*Boletus salicinus* Pers.; Gmel. Syst. 2: 1437. 1791; Syn. 543. 1801. Not *B. salicinus* Bull. Herb. Fr. pl. 433. f. 1. 1789.

*Boletus conchatus* Pers. Obs. 1: 24. 1796; Syn. 538. 1801.

*Polyporus salicinus* Fries, Syst. Myc. 1: 376. 1821; Icon. pl. 185. f. 2.

*Polyporus conchatus* Fries, Syst. Myc. 1: 376. 1821.

*Fomes salicinus* Gill. Champ. Fr. 1: 684. 1878; Karst. Icon. 4, f. 5. 1883.

*Phellinus salicinus* Quél. Ench. 172. 1886.

*Boletus salicinus* Pers. and *Boletus conchatus* Pers. were different forms of the same plant. Most of the old willow stumps in Sweden are covered with it. On the sides of the stumps it is *B. salicinus* and farther up, where the pileus is reflexed, it is *B. conchatus*. This fungus is quite common in Europe and America on a variety of hosts. The following list includes only a few of the collections examined: Sydow, Myc. Mar. no. 3423; Ellis, N. A. Fungi no. 918; Romell, Fungi Suecici no. 12; England (Plow-right), Sweden (Murrill), New York (Underwood, Ellis, Shear), Indiana (Underwood), Canada (Macoun), Ohio (Lloyd, Morgan), Pennsylvania (Rau).

#### 12. *Pyropolyporus Haematoxyli* sp. nov.

A smooth applanate plant of considerable size with brownish tubes and honey-yellow context. Pileus woody, dimidiate, sessile, thickest behind,  $12 \times 14 \times 4$  cm.; surface glabrous, dark brown, shallowly concentrically sulcate, marked with numerous darker concentric lines; margin fulvous, thin, rounded, slightly undulate: context corky to woody, indistinctly concentrically banded,

honey-yellow, 1 cm. thick; tubes distinctly stratified, longer behind, 0.5–1 cm. long each season, 6 to a mm., dull brown, mouths polygonal, concolorous, edges obtuse, becoming thin; spores globose, rarely ovoid, thin-walled, smooth, hyaline, 3.5–5  $\mu$ , hyphae ferruginous, cystidia none.

Collected by Earle at the base of a living logwood tree in Paradise, Jamaica, November, 1902.

### 13. *Pyropolyporus Langloisii* sp. nov.

A large thin expanded fungus with brown hymenium and a brown or blackish surface. Pileus corky, fan-shaped, attached by a narrow base, often depressed behind, 8–13  $\times$  10–25  $\times$  0.3–1.5 cm.; surface at first anoderm, soft, clothed with brown tomentum, many times concentrically sulcate, at length glabrous, rough, indurate, black, marked with numerous shallow furrows; margin velvety, brown, thin, acute, undulate or slightly lobed: context soft to corky, indurate in age, deep brown, 0.2–0.5 cm. thick; tubes reviving, distinctly stratified, 0.2–0.5 cm. long each season, 9–8 to a mm., brown, mouths polygonal, concolorous, edges thin at maturity: spores globose, smooth, hyaline, 3  $\mu$ , cystidia none.

Collected in quantity several seasons in Louisiana by Langlois, exclusively on dead or dying hawthorn trees near the base of the trunk. Referred to *P. pectinatus* Kl., *P. senex* N. & M., *P. conchatus* Pers., and *P. Ribis* (Schum.) Fries by European mycologists, from all of which it is quite distinct, probably approaching nearest to the last. Several specimens from the various collections made by Langlois are in the Underwood herbarium and the herbarium of the New York Botanical Garden.

### 14. *Pyropolyporus Ribis* (Schum.)

*Boletus Ribis* Schum. Enum. Pl. Saell. 2: 336. 1803.

*Polyporus Ribis* Fries, Syst. 1: 375. 1821.

*Polyporus ribesius* Pers. Myc. Eur. 2: 80. 1825.

*Polyporus Ribis* Fries; Sturm, Deuts. Fl. 3: 137. pl. 62. 1837.

*Fomes Ribis* Gill. Champ. Fr. 1: 685. 1878.

According to some authorities *P. Lonicerae* Weinm. and *P. Euonymi* Kalchb. are only forms of the above. Rabenhorst-Winter, Fungi Europaei, no. 2937; Roumeguère, Fungi Gallici, no. 3304; De Thümen, Myc. Univ., no. 509; Linhart, Fungi

Hung., no. 349; Krieger, Fungi Sax., no. 423; New York (Ellis); New Jersey (Geissman, Ell. & Ev. N. A. Fungi no. 1693); Kansas (Bartholomew).

The usual host of this fungus is the red currant, but it is also found on other species of *Ribes* and occasionally upon other shrubs growing near by. Specimens from Bartholomew were collected on living stems of *Symphoricarpos occidentalis*, July 24, 1895; and it has also been reported as attacking rose-bushes.

15. **Pyropolyporus Yucatanensis** sp. nov.

A large blackish brown very rimose fungus with tawny tubes and substance. Pileus woody, dimidiate, applanate, thickest behind,  $7-9 \times 9-12 \times 2-3$  cm.; surface clothed at first with tawny tomentum, becoming very dark brown or black and uniformly tubercular and broken into small areas by numerous shallow concentric furrows and radial cracks; margin narrow, acute, velvety, fulvous: context hard, fulvous, 0.5 cm. thick; tubes rather indistinctly stratified, 0.25 cm. long each season, 7 to a mm., fulvous; mouths circular, punctate, edges thick, obtuse: spores globose or subglobose; smooth, pale yellowish brown,  $3.5-5 \mu$ , hyphae ferruginous, cystidia thick at the base, pointed,  $17-35 \mu$ .

Collected in Yucatan by Millspaugh and in Nicaragua by C. L. Smith.

16. **Pyropolyporus senex** (Nees & Mont.)

*Polyporus senex* Nees & Mont. Ann. Sci. Nat. II. 5: 70-71. 1836.

*Fomes senex* Cooke, Grevillea, 13: 118. 1885.

A number of specimens collected by C. L. Smith in Mexico and Nicaragua are in the New York Botanical Garden herbarium. Dr. Patouillard says they are typical *P. senex*. They are larger, thicker and more woody than plants from Florida and Louisiana that have been called *P. senex*.

17. **Pyropolyporus linteus** (B. & C.)

*Polyporus linteus* B. & C. Proc. Am. Acad. Arts & Sci. 4: 122. 1860.

*Fomes linteus* Cooke, Grevillea, 14: 20. 1885.

The type specimens were collected on dead bark in Nicaragua. Plants collected in Nicaragua by C. L. Smith agree with the

types in all important particulars. The same species from Cuba is labelled *P. pectinatus* Kl. at Kew, though the latter plant does not, to my knowledge, occur in North America.

### 18. *Pyropolyporus Jamaicensis* sp. nov.

A rather small fan-shaped plant, the upper layers of which are dead and much cracked and roughened while the layers added below are smaller each succeeding year. Pileus woody, appanate, much thicker behind,  $8 \times 13 \times 0.5-5$  cm.; surface uneven, radiately rimose, dark brown to black; margin ferruginous, velvety, acute, becoming black, spreading and lobed, projecting 1-2 cm. beyond the new layers: context woody, fulvous, 0.5-1 cm. thick; tubes stratified, separated by thin annual layers of context, 0.2-0.7 cm. long each season, 7 to a mm., fulvous within, mouths rounded or polygonal, hoary when young, edges thin, acute, entire: spores globose or subglobose, thin-walled, smooth, pale golden-yellow (probably darker in age),  $5-7 \mu$ .

Collected by Earle, at Port Antonio, Jamaica, November, 1902, on an old stump of *Psidium*. The spores of the present season appear immature.

#### SPECIES INQUIRENDÆ

In this list is included not only species at present unknown, but also plants described by foreign authors which have not been seen or have been as yet only slightly studied by the writer. *Polyporus extensus* Lév., *P. elatus* Lév., *P. Nicaraguensis* B. & C., *P. sarcitus* Fries, *P. sclerodes* Berk., *P. scleromyces* B. & C., *P. sordidus* Lév., *P. subflexibilis* B. & C., *P. Baccharidis* Pat., *Ganoderma Mexicanum* Pat., *Xanthochrous igniarioides* Pat.

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